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EXAMINER	
GOLLAMUDI, SHARMILA S	

ART UNIT	PAPER NUMBER
1616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/673,872	WAI-CHIU SO ET AL.	
	Examiner	Art Unit	
	Sharmila S. Gollamudi	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,8-17,19-21,23 and 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,8-17,19-21,23 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Receipt of Request for Continued Examination and the Rule 132 received on 5/22/06 is acknowledged. Claims **1-4, 6, 8-17, 19-21, and 23-24** are pending in this application. Claims 5, 7, 18, 22, and 25 stand cancelled.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 6, 8-9, 12-18, 21, 23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending 6946120.

Although the conflicting claims are not identical, they are not patentably distinct from each other since the subject matter claimed in both applications is similar.

Instant application is directed to a topical composition containing A) at least 5% of a piperidinopyrimidine, B) an acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof', C) a solvent selected from water and/or a lower alcohol, and D) a co-solvent

selected from an aromatic or polyhydric alcohol in the amount of less than 10%, wherein the composition is in the form of a solution, tonic, ointment, mousse, a foam, shampoo, an aerosol, gel, paste, and cream. Instant application is also directed to method for the treatment of hair loss and related indications in humans, comprising the steps of: providing a homogeneous pharmaceutical composition for topical administration having at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof; an acid in an amount to substantially completely solubilize the minoxidil or a pharmaceutically acceptable salt thereof, wherein the acid is a mineral acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof; a solvent selected from water and/or a lower alcohol; a co-solvent selected from one or more of the group consisting of aromatic and polyhydric alcohols present in an amount of less than approximately 10% by weight.

US '120 is directed to a topical composition containing A) at least 5% of a piperidinopyrimidine, B) an acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof', C) a solvent selected from water and/or a lower alcohol wherein the ratio of water to alcohol is in a range of approximately 9:1 to 1:9 by volume, and D) a co-solvent a co-solvent of a polyhydric alcohol selected from 3-butylene glycol, polyethylene glycol, hexylene glycol, dipropylene glycol, glycerol or propylene glycol at less than approximately 10% by weight, wherein the final product is a foam or a mousse. US '120 independent claim 19 is

directed to a method for the treatment of hair loss and related indications in humans comprising the step of applying topically to the human scalp a therapeutically or prophylactically effective amount of a homogeneous aerosol formulation wherein the final product is a foam or a mousse that breaks with shear according to any one of claims 1-4, 5, 6, 7, or 8-18.

Thus, the instant subject matter is the generic scope in relation to the species claimed in co-pending application wherein the instant claims are drawn to composition that may be in the form of a solution, tonic, ointment, mousse, a foam, shampoo, an aerosol, gel, paste, and cream and US '120 is directed to a foam. Further, the instant application does not specify the water to alcohol ratio whereas US '120 recites a 9:1 to 1:9 ratio. Therefore, the claims of US '120 are anticipated by the instant claims.

Response to Arguments

Applicant's arguments filed 10/ have been fully considered but they are not persuasive. Applicant argues that a Terminal Disclaimer has been filed in application 10/124197 and thus rendering the instant double patenting rejection moot.

The examiner points out that a Terminal Disclaimer must be filed in each application and a Terminal Disclaimer filed in a continuation does not transfer to a related applications.

Claims 1-4, 6, 8-17, 19-21, 23-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of 21-24, 26-39 copending Application No. 10/949116.

Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Instant application is directed to a topical composition containing A) at least 5% of a piperidinopyrimidine, B) an acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof', C) a solvent selected from water and/or a lower alcohol, and D) a co-solvent selected from an aromatic or polyhydric alcohol in the amount of less than 10%, wherein the composition is in the form of a solution, tonic, ointment, mousse, a foam, shampoo, an aerosol, gel, paste, and cream. Instant application is also directed to method for the treatment of hair loss and related indications in humans, comprising the steps of: providing a homogeneous pharmaceutical composition for topical administration having at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof; an acid in an amount to substantially completely solubilize the minoxidil or a pharmaceutically acceptable salt thereof, wherein the acid is a mineral acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof; a solvent selected from water and/or a lower alcohol; a co-solvent selected from one or more of the group consisting of aromatic and polyhydric alcohols present in an amount of less than approximately 10% by weight.

Instant application claim 21 is directed to a method for the treatment of hair loss and related indications in humans including providing a pharmaceutical composition including A) at least 5% of a piperidinopyrimidine derivative or a pharmaceutically acceptable salt thereof; B) an acid; C) a solvent system comprising water and/or a lower alcohol and a co-solvent selected

from the aromatic and polyhydric alcohols; wherein when the co-solvent includes propylene glycol, it is present in a an amount of less than approximately 10%.

Instant application claim 26 is directed to a method for preparing a pharmaceutical composition including A) at least 5% of a piperidinopyrimidine derivative or a pharmaceutically acceptable salt thereof; B) an acid; C) a solvent system comprising water and/or a lower alcohol and a co-solvent selected from the aromatic and polyhydric alcohols; wherein when the co-solvent includes propylene glycol, it is present in a an amount of less than approximately 10%. Dependent claim 27 is directed to further adding a propellant.

It should be noted that the instant dependent claims and that of '116 have similar claims limitations.

The difference between the instant claims and '116 is firstly that the instant claims are is specifically directed to minoxidil and '116 are broadly directed to piperidinopyrimidine derivative or salt. However, the dependent claims of copending '116 recite minoxidil as the piperidinopyrimidine. Secondly, the instant claims are directed to specific acids in a Markush group and '116 is broadly directed to an acid. However, dependent claims of '116 also recite the same acids. Thus, both applications are directed to similar subject matter and the subject matter of the instant claims are encompassed by copending application's claims.

With regard to the instant composition claims, although '116 is not directed to a composition, one would necessarily have possession of the composition by practicing the method of '116.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 6, 8-9, 12-17, 19, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazzano (5183817) in view of WO 97/12602 or Yu et al (EP0273202) respectively.

Bazzano teaches a minoxidil composition to increase growth rate and stimulate new hair growth by administering a lotion containing 0.01-0.1% retinoic acid, 0.5-5% minoxidil, ethanol, 5-50% propylene glycol, 0.1% BHT, and distilled water (up to 10%). Formulation example II contains 1% retinoic acid, 10% minoxidil, 4% cetyl alcohol, 4% ethanol, and up to 100% water. Bazzano teaches the use of pharmaceutically acceptable acid salt. See column 19, lines 1-25. Bazzano states that minoxidil or its derivatives and analogs that are described in US patents 5910928, 3637697, 3461461, 4139619, and 4596812 are incorporated into the reference. US patent 3,461,461 teaches the acid salt derivatives including lactic acid and other instantly

claimed acids of minoxidil. Bazzano discloses that a major problem in influencing hair growth is obtaining good percutaneous absorption of the active compounds. The retinoid compounds cause excellent absorption of the hair follicles. See column 19, lines 35-40. The formulation can contain any pharmaceutically acceptable carrier, additive, or solubilizer.

Although Bazzano states that a minoxidil derivative/analog many be utilized, Bazzano does not explicitly teach the use of an acid addition.

WO teaches a topical composition for minoxidil and teaches minoxidil is not soluble in water, acetone, ethyl acetate and although the alcohol based solutions of minoxidil have only some penetration. See page 2. WO teaches modifying the solubility of the active in an aqueous solution by making it more hydrophilic without changing the active agent's therapeutic properties. The active agent that is more hydrophilic, has improved penetration through the hair follicle. WO teaches modifying by reacting it with an hydroxy organic acid such as lactic acid. See page 3 and 4.

Yu et al teach additives such as hydroxy acids enhance the therapeutic effects of pharmaceutical and cosmetic actives in topical treatments. See page 2. The pharmaceutical or cosmetic active is utilized generally in the amount of 0.01-40% and the hydroxyl acid is used in the amount of 0.01-99%. See page 6. Yu teaches the use of 3% lactic acid with minoxidil to help the minoxidil dissolve in the solution and enhance penetration and the efficacy of minoxidil on hair growth. The pH of the solution is 4.7. See example 3.

It is would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bazzano and WO and utilize the instant minoxidil acid salt. One would have been motivated to do so since WO teaches this addition to yield a

hydrophilic compound, allows for better penetration into the hair follicles. Further, since Bazzano is concerned with penetration of the composition into the hair follicle one would expect an additive effect of increasing penetration of the composition by adding instant salt. A skilled artisan would have reasonably expected success and similar results since Bazzano also teaches the acid salts may be utilized and incorporated other US patents wherein the instant acid salt is taught.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made combine the teaching of Bazzano and Yu et al and utilize the instant acid. One would be motivated to do so Yu teaches adding lactic acid dissolves minoxidil providing better penetration of minoxidil. Therefore, a skilled artisan would have been motivated to add an acid for enhanced penetration of minoxidil into the hair follicle. Moreover, one would have expected similar results by the instant combination since Bazzano suggests the use of an acid addition salt.

With regard to the instantly claimed ratio, Bazzano sets forth a general range of components wherein water is utilized in an amount up to 10% and ethanol is to balance, thus it is within the skill of an artisan to look at the guidance provided by Bazzano and manipulate the concentrations (ratio) of water and ethanol depending on the concentration of the other components. It should be noted that generally difference in concentrations do not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such as concentration is critical. See In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Response to Arguments

Applicant argues that examiner has impermissibly used additional references, which are not positively recited in the rejection. Applicant argues that Bazzano teaches a retinoid, which is an essential ingredient in the formulation. Thus, applicant argues that a skilled artisan would not have been motivated to exclude Bazzano's retinoid. The applicant further asserts that claim language is not the test for obviousness and the test for obviousness is whether the combined references teach all the limitations.

Applicant's arguments filed 5/22/06 have been fully considered but they are not persuasive. Firstly, it is pointed out that when information is incorporated by reference, the information incorporated is as much a part of the application as filed as if the text was repeated in the application, and should be treated as part of the text of the application as filed. See MPEP 2163.07. Thus, in instant case Bazzano clearly incorporates US 5910928, 3637697, 3461461, 4139619, and 4596812 by reference and therefore the entire disclosure of these cited patents are part of Bazzano's disclosure. Therefore, the examiner does not have to positively recite these references in the rejection since they are part of Bazzano's disclosure itself. The examiner points out that the applicant has inappropriately applied *In re Hoch*. In *In re Hoch*, the examiner relied on a reference to demonstrate a property of a compound and this reference was not incorporated by reference. Therefore, the board held that the reference must be positively recited in the rejection since it was pertinent to the examiner's rejection.

With regard to applicant's argument that Bazzano 's formulation contains a retinoid, the examiner points out that the instant claim language is open-ended. Therefore, the instant claims language does not exclude the use of a retinoid. Moreover, since the claim language is **not** close-

ended, the examiner need not provide a motivation to exclude a retinoid from Bazzano's formulation.

The examiner notes the test for obviousness and points out Bazzano teaches all the claimed limitations. The claims **comprise** A) at least 5% minoxidil or a salt thereof, B) an acid, C) a solvent selected from water or a lower alcohol, and D) less than 10% of a co-solvent selected from an aromatic or polyhydric alcohol. Bazzano teaches a lotion comprising A) 0.5-5% minoxidil, C) ethanol and distilled water, and D) 5-50% propylene glycol. Further, US patent 3,461,461, which is incorporated by reference, teaches the acid salt derivatives including lactic acid and other instantly claimed acids of minoxidil. Thus, it can be clearly seen that Bazzano by itself suggests all the instantly claimed limitations.

Applicant argues that Weiner et al does not cure the deficiencies of Bazzano. Applicant argues that although Weiner teaches modifying minoxidil with the instant acids to make it more hydrophilic, Weiner teaches the encapsulation of the modified active in a lipid vesicle. The applicant argues that the instant invention does not require the lipid vesicle.

Firstly, it is pointed out that the examiner relies on Weiner for it specific teachings that a modifying minoxidil with instant salts provide a hydrophilic active. Weiner teaches the use of a salt derivative to further increase the penetration of minoxidil. Again the examiner points out that the instant claim language, "comprising", does not exclude other components in the formulation. Therefore, the scope of the instant claims allows for Weiner's lipid vesicles.

Claims 1-4, 6, 8-9, 12-17, 19, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/03638 to Navarro et al in view of WO 97/12602 to Weiner et al or Yu et al (EP0273202) respectively.

Navarro teaches the solvent system comprising the combination of ethanol or isopropyl alcohol and propylene glycol or polyethylene glycol solubilize minoxidil but the significant amount of propylene glycol makes the hair greasy and shiny. See page 2 of translation. Navarro teaches using cyclodextrin to reduce the amount of solvent required to solubilize minoxidil. See page 3 of the translation. Navarro teaches a hair care composition containing 0.1-7% minoxidil, 0.1-5% cyclodextrin, 0.5-15% minoxidil solvent (propylene glycol), 30-50% monoalcohol (ethanol or isopropanol), and water. Note abstract and examples.

Navarro does not teach the use of lactic or acetic acid.

Weiner teaches a topical composition for minoxidil. WO discloses that making materials more hydrophilic, improves penetration through the hair follicle. Weiner teaches that a number of different modifications may be made to the minoxidil. One such modification is provided by reacting minoxidil with an organic acid such as lactic acid. The minoxidil may also by converted to a salt by reacting it with a cyclodextrin. See page 3. Weiner states that the use of a minoxidil acid salt addition provides substantial penetration and cyclodextrin salt addition is the "next best". See page 7.

Yu et al teach additives such as hydroxy acids enhance the therapeutic effects of pharmaceutical and cosmetic actives in topical treatments. See page 2. The pharmaceutical or cosmetic active is utilized generally in the amount of 0.01-40% and the hydroxyl acid is used in the amount of 0.01-99%. See page 6. Yu teaches the use of 3% lactic acid with minoxidil to help the minoxidil dissolve in the solution and enhance penetration and the efficacy of minoxidil on hair growth. The pH of the solution is 4.7. See example 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Navarro et al and Weiner et al and substitute Navarro's cyclodextrin with the instant acid to convert minoxidil into a salt. One would be motivated to do so since Weiner teaches that by converting minoxidil to a hydrophilic compound, it penetrates the skin penetrate. More specifically, Weiner teaches the conversion of minoxidil into a salt form by reacting it with an organic acid such as instant lactic acid or with cyclodextrin and notes that although both provide penetration of minoxidil, the acid salt addition has a better effect than the cyclodextrin salt addition. Therefore, one would have been motivated to use an acid salt addition to convert minoxidil into a hydrophilic compound rather than Navarro's cyclodextrin since Weiner teaches the acid salt addition has better penetration into the skin. With regard to the pH recited in the dependent claims, it is the examiner's position that the combination of Navarro and Weiner would yield a pH in the instant range.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made combine the teaching of Navarro and Yu et al and add the instant acid to Navarro's composition. One would be motivated to do so Yu teaches adding hydroxyacids such as lactic acid dissolves minoxidil providing better penetration of minoxidil. Therefore, a skilled artisan would have been motivated to add an acid for enhanced penetration of minoxidil into the hair follicle. Moreover, a skilled artisan would have expected an additive effect of increasing solubility of minoxidil and increasing minoxidil's penetration into the hair follicle by further adding the instant acids.

With regard to the instantly claimed ratio, Navarro sets forth a general range of components wherein a monoalcohol is utilized in an amount of 30-50% and water to balance,

thus it is within the skill of an artisan to look at the guidance provided by Navarro and manipulate the concentrations (ratio) of water and ethanol depending on the concentration of the other components. It should be noted that generally difference in concentrations do not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such as concentration is critical. See In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

With regard to claim 4, the lower limit of 7.5% is considered obvious over Navarro's teaching that the minoxidil may be in the amount of 7%. A skilled artisan would have been motivated to manipulate the concentration of active, i.e. increase the amount of minoxidil, in the composition depending on the desired "strength" of the composition.

Response to Arguments

Applicant argues that that the prior art references teach the encapsulation of minoxidil. Applicant argues that Navarro teaches encapsulating minoxidil with a cyclodextrin carrier. Applicant argues that Weiner teaches the use of a lipid vesicle to encapsulate the minoxidil salt. Applicant argues that the examiner's motivation to substitute Navarro's cyclodextrin encapsulation with Weiner's encapsulation would destroy the aim of Navarro.

Applicant's arguments filed 5/22/06 have been fully considered but they are not persuasive. The examiner notes that Weiner indicates that an encapsulated lactic salt of minoxodil has greater penetration than unencapsulated form. However, the examiner again points out that the instant claim language is open-ended. Therefore, the instant claims language does not exclude Weiner's lipid vesicle.

With regard to the examiner's motivation, the examiner points out that Weiner clearly compares Navarro's cyclodextrin encapsulation of minoxidil with a liposome encapsulated minoxidil lactate and teaches the liposome encapsulated minoxidil lactate is better than Navarro's encapsulation. Therefore, this is a clear motivation to substitute Navarro's cyclodextrin encapsulated minoxidil with Weiner's liposome encapsulated minoxidil lactate since the latter affords better penetration. The examiner points out to establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Clearly, Weiner provides a motivation to modify Navarro's invention. Furthermore, there is a reasonable expectation of success since both references are directed increasing the topical penetration of minoxidil.

Accordingly, the rejection is maintained.

Claims 10-11, 20, and 24 under 35 U.S.C. 103(a) as being unpatentable over Bazzano (5183817) in view of WO 97/12602 Yu et al (EP0273202) respectively in further view of Caldini et al (4,272,516).

The teachings of Bazzano, WO, and Yu have been set forth above.

The references do not teach the use of benzyl alcohol.

Caldini et al teach a process for improving transcutaneous and transfollicular absorption of cosmetic compositions in the amount of 5-33.33%. See abstract. Caldini teaches benzyl alcohol has the ability of facilitating the absorption of the other components through the skin and its associated organs. See column 1, lines 10-20. The cosmetic compositions include a lotion for reactivating the hair, a reactivating jelly, a tonic milk, and a reactivating cream. See column 4,

lines 40-45. Caldini teaches a reactivating lotion that comprises comprising a solvent system of 4% propylene glycol, 12% benzyl alcohol, 31.5% water, and 47.5% ethanol. See example 1.

It would have been obvious at the time the invention was made to combine the teachings of Bazzano, WO, and Caldini and utilize benzyl alcohol in the solvent system. One would have been motivated to do so since Caldini et al teach the use benzyl alcohol in an amount of 5-33.33% improves transcutaneous and transfollicular absorption of active agents, especially hair reactivating composition. Furthermore, Bazzano is also concerned with the penetration of the minoxidil composition into the hair follicle and thus one would expect an additive effect of increasing penetration of the composition by adding benzyl alcohol in the composition of Bazzano.

Claims 10-11, 20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/03638 to Navarro et al in view of WO 97/12602 Yu et al (EP0273202) respectively in further view of Caldini et al (4,272,516).

The teachings of Navarro, Weiner, Yu et al have been set forth above.

The references do not teach the use of benzyl alcohol.

Caldini et al teach a process for improving transcutaneous and transfollicular absorption of cosmetic compositions in the amount of 5-33.33%. See abstract. Caldini teaches benzyl alcohol has the ability of facilitating the absorption of the other components through the skin and its associated organs. See column 1, lines 10-20. The cosmetic compositions include a lotion for reactivating the hair, a reactivating jelly, a tonic milk, and a reactivating cream. See column 4, lines 40-45. Caldini teaches a reactivating lotion that comprises comprising a solvent system of 4% propylene glycol, 12% benzyl alcohol, 31.5% water, and 47.5% ethanol. See example 1.

It would have been obvious at the time the invention was made to combine the teachings of Navarro, Weiner, and Caldini and utilize benzyl alcohol in the solvent system. One would have been motivated to do so since Caldini et al teach the use benzyl alcohol in an amount of 5-33.33% improves transcutaneous and transfollicular absorption of active agents, especially hair reactivating composition. Therefore, a skilled artisan would have been motivated to add benzyl alcohol to increase the transfollicular penetration of the hair composition into the scalp.

Claims 1-3, 5-6, 8-9, 12-19, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Di Schiena (4866067) in view of WO 97/12602.

Di Schiena discloses minoxidil (0.1-10%, ex: 5%) combined with oxyniacic acid for topical treatment of alopecia. The reference discloses that minoxidil is insoluble in water and the salt form of minoxidil is soluble in a water-based composition. Therefore, an acid makes it remarkably soluble in water without loading the composition with glycols. Di Schiena discloses a foam composition containing the instant active, water, a lower alcohol, and propylene glycol (9%) in a foam composition (note examples). The foam composition also contains cetyl alcohol and a surfactant. Di Schiena teaches methanol, ethanol, or isopropanol as suitable solvents (col. 2, lines 17-20 and examples. Further, the reference exemplifies a lotion containing the active without the use of a glycol, instant amount of water, ethanol, and active (example b). The examples teach a variety of water to lower alcohol ratios.

Di Schiena does not teach the use of lactic or acetic acid.

WO teaches a topical composition for minoxidil. WO discloses that making materials more hydrophilic, improves penetration through the hair follicle. Minoxidil is modified by reacting it with an organic acid such as lactic acid. See page 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Di Schiena and WO and utilize the instant acids. One would have been motivated to do so since WO teaches that organic acids modify minoxidil to yield a hydrophilic active and therefore is more soluble in water and improves penetration into the hair follicle. Therefore, since Di Schiena also teaches the use of an organic acid to improve solubility it is within the skill of an artisan to substitute another acid with the expectation of similar results.

With regard to the claimed ratio of 17, it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to manipulate the parameters set forth in Di Schiena. One would have been motivated to do so as part of routine experimentation to yield the best possible results. Differences in concentration do not extend patentability to subject matter encompassed in the prior art unless there is evidence-indicating criticality.

Response to Amendment

The Declaration under 37 CFR 1.132 filed 5/22/06 is insufficient to overcome the rejection of claims based upon Di Schiena in view of WO 97/12602 because:

Although the examiner notes applicant's asserted unexpected property that the instant composition is homogenous whereas Di Schiena is only homogenous after being shaken, the examiner notes the claims are not commensurate in scope. For instance, applicant compared a specific "inventive" composition with specific components in specific weight percents with the prior art. Thus, the unexpected property of homogeneity is due to the components in the inventive composition used in the Rule 132 declaration. Thus, the claims must be commensurate in scope.

Conclusion

All the claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharmila S. Gollamudi whose telephone number is 571-272-0614. The examiner can normally be reached on M-F (8:00-5:30), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Examiner
Art Unit 1616

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